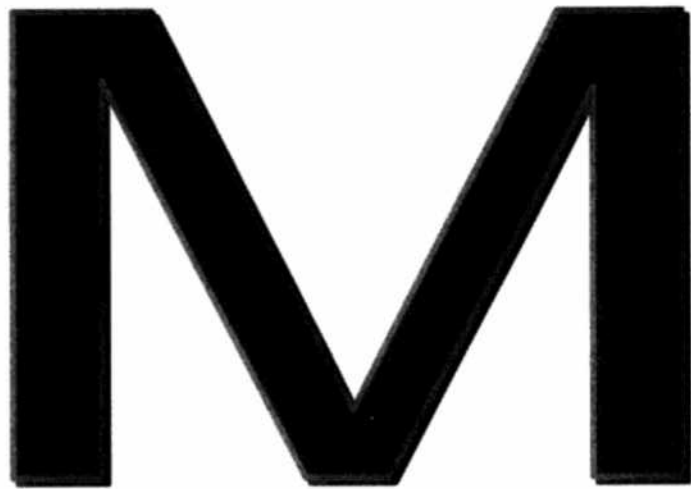


Algebra I

Summer Review



This packet is designed for you to review the skills you will need for success and make sure you are well prepared for the start of your Algebra I course.

This packet is due at the start of school.

**Try to use your calculator only when absolutely necessary while you are completing this packet, since the objective of this packet is to verify your understanding of the concepts. Please show all of your work as this will be required of you throughout the entire school year. Please do all your work in pencil!!!*

****It is highly recommended that you have your own scientific calculator for Algebra I!**

Part 1. Number Sense

Order of Operations – simplify each of the following mathematical expressions. These should be done **without** a calculator.

1). $14 \div 7 + 3^2$

2). $42 \div 2 (-12 + 9)$

3). $\sqrt{49}$

4). $|-14|$

5). $18 - 30 \div 5$

6). $48 \div (5+7) - 9$

7). $4^3 - 5(2) + 13$

Adding/Subtracting/Multiplying/Dividing Positive and negative Numbers --
This is also done **without** a calculator.

8). $-2 + 11 - 7$

9). $5 - 3 + 12 - (9)$

10). $\frac{-4}{\left(\frac{3}{4}\right)}$

11). $(-2)(4)(-5)(-1)$

12). $-4 + -9 - 3(-6)$

13). $\left(\frac{3}{5}\right)\left(-\frac{7}{12}\right)$

Evaluating Expression – you may use a calculator on this, but show substitutions and steps.

14). $3(n-1) + 2n$, when $n = 5$

15). $7b - 2a$, when $a = -3$ and $b = 4$

16). $3x^2 + 5x + 1$, when $x = -2$

17). $\frac{2r}{t} + 7$, when $r = 12$ and $t = 3$

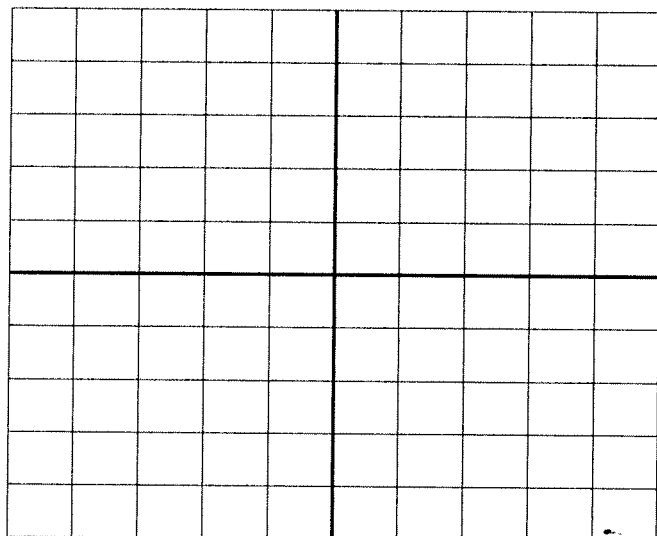
18). $(3x)^2 - 7y^2$, when $x = 3$ and $y = 2$

19). $4(3d + 6) - 2d$, when $d = -6$

Part 2. Graphing

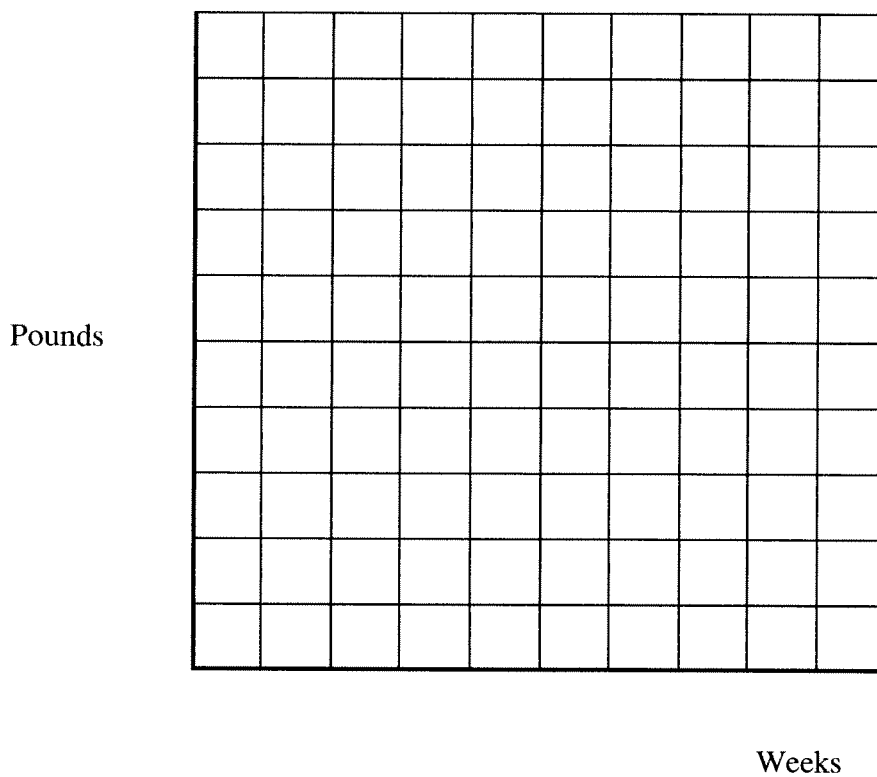
Plot each of the following points on the grid below. Use the letter to label the point on the graph.

- 1). $A(3,0)$ 2). $B(3,4)$ 3). $C(-4,3)$ 4). $D(-2,-4)$ 5). $E(0,-2)$



Taylor is participating in a new fitness program in which he is required to report his weight at the end of each week. The table below shows some of his results. Graph the data on the graph below.

Number of Weeks in the Fitness Program	Weight (in pounds)
2	181
5	176
9	167
12	160
16	153
19	148



Using information from the graph and table, predict Taylor's starting weight and weight after 25 weeks in the program.

Part 3. Patterns, Functions and Algebra

- 1). Find the *next three numbers* in the pattern. 2). Find the *next three numbers* in the pattern

3, 7, 11, 15, 19, _____, _____, _____

1, 2, 4, 8, 16, _____, _____, _____

Use the function tables given to find the function rules.

3).

x	? _____
4	-12
5	-15
6	-18
7	-21
8	-24

4)

x	? _____
1	3
2	5
3	7
4	9
5	11

Equations

Solve each equation

5). $x - 5 = 10$

6). $x + 7 = 5$

7). $3x = 18$

8). $\frac{x}{2} = -10$

Distributive Property

Example: $4(x + 5) = 4(x) + 4(5) = 4x + 20$

9). $3(b + 9)$

10). $5(2x - 3)$

11). $-3(4x + 9)$

12). $x(2x + 4)$

13). $\frac{1}{2}(4r + 12)$

Part 4: Applications

1. What is 50% of the sum of the first 10 odd numbers?
2. Evaluate $\frac{1}{a} + 3a$ if $a = \frac{1}{2}$. Express your answer as a mixed number.
3. Insert the fewest number of grouping symbols to make the following equation true.
$$24 \div 3 + 9 \times 5 - 2 = 6$$
4. A student who is 5' 6" casts a 4' shadow. How many feet tall is a nearby tree which casts a 24' shadow?
5. If eight students scored 100 on a test, twelve scored 90, and eight scored 80, what was the mean of the students' scores?
6. If 24 students in a class of 30 students were present, what percent of the students were absent?
7. If the price of a shirt is reduced by 20% to \$14.40, find the original price.
8. Karen opened a checking account by depositing \$500. She wrote checks for \$13.85, \$28.14 and \$230.18. She made a deposit which was a tenth of the opening balance. What is the balance in her account?

9. The tax on a car costing \$9,200 is \$368. At the same tax rate, what will the tax be on a car costing \$12,500?

- a). \$437.50 b). \$562.50 c). \$250 d). \$500

10). Last year, central High School had 800 students. This year's enrollment dropped to 600. What was the percent of decrease?

- a). 75% b). $33\frac{1}{3}\%$ c). 25% d). $133\frac{1}{3}\%$

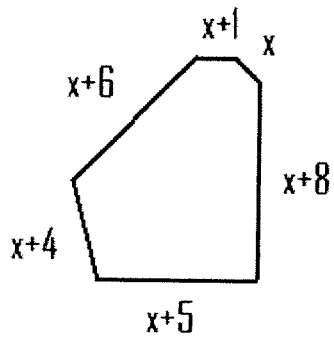
11. A rubber ball bounces exactly half as high as it did on the previous bounce. It bounces 128 feet high on the first bounce. How high does it bounce on the 12th bounce? Express your answer as a common fraction.

12. Bob lives eight blocks due east of Helen. Helen lives three blocks due west of Ilene. Where does Ilene live in relation to Bob?

13). Bob saves \$x per month for three months. His father gives him \$40 and he has enough money to buy the \$115 tennis shoes he wants. Which equation shows this information?

- a). $3x + 25 = 115$ b). $115 - 40 = 3x$ c). $3x + 40 = 115$ d). $40 - 3x = 115$

14). Use the figure below to answer the following questions.



a) If $x = 2.5$, find the perimeter of the figure.

b). If the perimeter of the figure is 84 units, find the value of x .